



Istanbul Technical University Robot Olympics 2022

Color Selecting Category Rules

Task Definition

- In this category, the robots must carry the cubes from gathering ground to correctly colored area.

Success Criteria

- In this category, the success is to place at least one prism to the correct place.

Robot Specifications

- 1) The width and length of the robots should not exceed 30 cm and the height should not exceed 50 cm.

Competition:

- 2) Every robot is reflected in the order,
- 3) Each contestant has two chance to contest. The higher score will be based on.
- 4) Robots have 5 minutes to contest.
- 5) Robots are all right for 5 minutes.
- 6) The prisms received from the robots receiving zone should leave any of their release pigments.
- 7) Robots can start the competition from any point of the black line.
- 8) Robots can take prism to the air by removing or dragging.
- 9) Robots can move as many prisms as they want every time.
- 10) If the competitors want it, they can start the initial apparatus to align the robot.
- 11) If the apparatus is used at the beginning of the robot, this apparatus may pass to the colored region.

- 12) Contestants must consider color tolerance when calculating.
- 13) Before the prism and the ground sample will be found in the technical room,
- 14) In this category, "above the category rules" apply.

Track Specifications

- 15) The track has a pickup zone with 8 prizes in 6 different colors and a drop zone with 8 area in 6 different colors.
- 16) The competition area is the area with black background and other colors (green, red, etc.).
- 17) The prisms are measuring 3 cm x 3 cm x 6 cm. The 3cmx3cm part of the prism is in contact with the ground.
- 18) The walls on the track are black MDF. The height of the walls is 10 cm and the thickness is 1.8 cm.
- 19) The criteria for the release zones are shown in Figure 1A. The dimensions of the receiving zones are 80cm x 20cm and are shown in figure 2A.
- 20) The height of the drop zones increases by one cm from the runway level up to 7cm. For example, zone 1: ground level, zone 2: 1cm, zone 3: 2 ..., zone 8: 7 cm.
- 21) To help with the chambers, there will be a 1.8 cm wide black line on the runway.
- 22) It is necessary to take the prisms from the pickup area and leave them in the drop zone.
- 23) All prisms will be in the middle of the rooms.
- 24) Prism weights range from 30 to 40 gr.

Scoring

- 25) When the robot is removed from the track, scoring will start.
- 26) The highest point will be assessed.
- 27) In order for the prism to qualify for the score, the right rennet must be in full contact.
- 28) The number of prisms not in the pickup zone will be multiplied by +100 and scored.
- 29) The cubes in the correct colors in the drop zone will be multiplied by +200 and scored.
- 30) To leave each cube out of the competition area -50 points.

31) In case of score equalization, the robot, which completes the contest in a shorter time, takes the top rank.

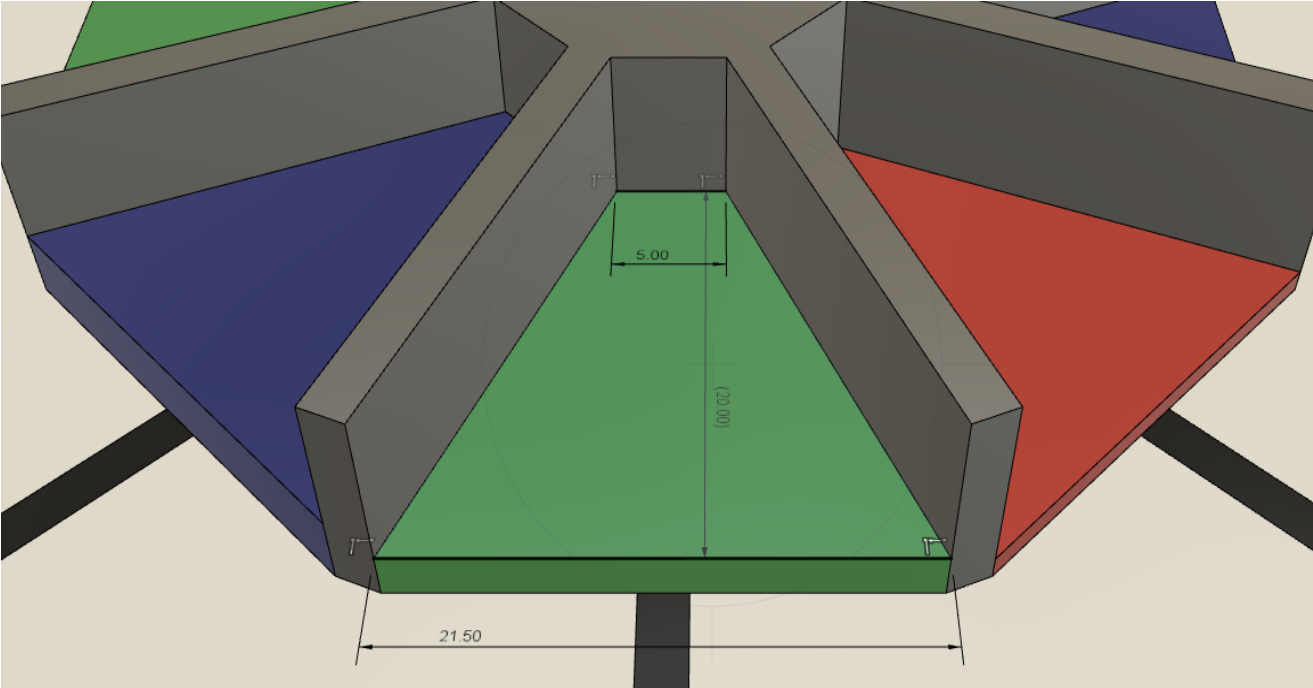


Figure 1A - Release Areas (Scale 1: 1 cm)

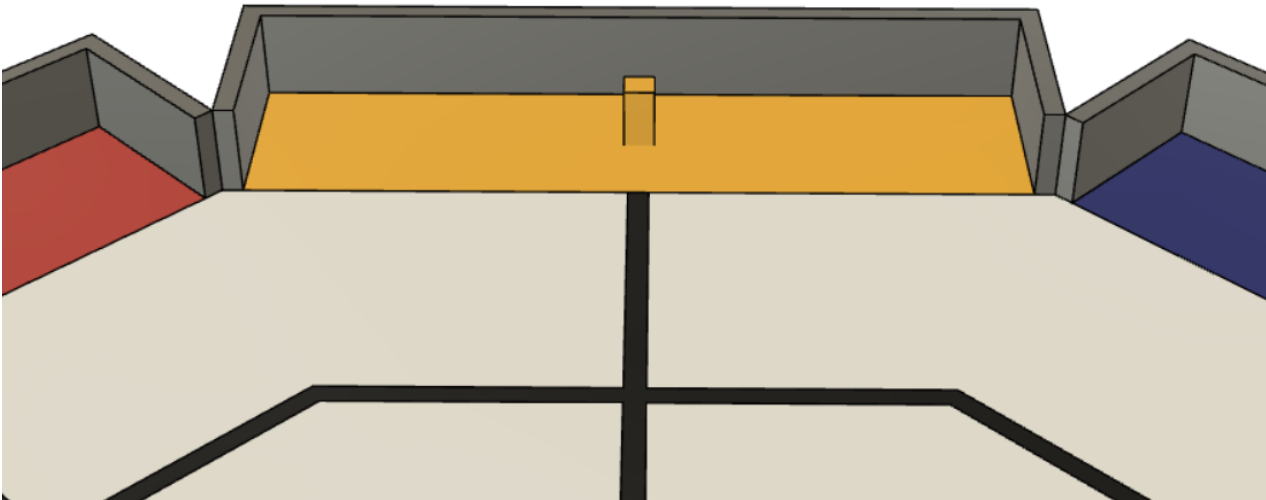


Figure 2A - Receiving Zones